

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 15, 19-21, 26-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Rickerby (EP 0 992 606 A2).

Regarding claim 14, Rickerby teach a method for producing an oxidation or corrosion preventing layer for a component, a gas turbine blade, having at least one substrate surface and a substrate composition, by depositing a coating material on the component to be coated in a physical vapor deposition process, wherein a single target containing at least platinum and aluminum as the coating material is used and the coating material is deposited on the substrate surface simultaneously in one process. (Paragraphs 0001, 0005, 0006, 0021, 0022, 0027, 0028, 0032, 0061, 0074-0078)

Regarding claim 15, Rickerby teach the substrate composition comprising nickel-based or cobalt-based alloy. (Paragraphs 0021, 0027)

Regarding claim 19, Rickerby teach the cathode sputtering is used as the physical vapor deposition process. (Paragraph 0023, 0031)

Regarding claim 20, Rickerby teach the cathode sputtering is performed in a vacuum chamber under a protective gas atmosphere. (Paragraphs 0074-0076)

Regarding claim 21, Rickerby teach the protective gas to be argon. (Paragraph 0075)

Regarding claim 26, Rickerby teach the target to be formed by the aluminum and platinum in a form of an intermetallic phase. (Paragraph 0032) (Alloy mixtures cover intermetallic phases)

Regarding claim 27, Rickerby teach a composition of the coating material is adapted to the component to be coated and also to the protective layer to be produced. (Paragraph 0002)

Regarding claim 28, Rickerby teach a method for producing a protective layer for a component, comprising the steps of deposition a coating material containing platinum and aluminum on the component by a physical vapor deposition process, wherein the platinum and aluminum are simultaneously deposited on the component by a physical vapor deposition process. (Paragraphs 0001, 0005, 0006, 0021, 0022, 0027, 0028, 0032, 0061, 0074-0078)

Regarding claim 29, Rickerby teach the physical vapor deposition process includes connecting the coating material to a voltage in a process chamber. (Fig. 3; Paragraphs 0005, 0074-0078)

Regarding claim 30, Rickerby teach accelerating gas ions of a process gas through a voltage field applied to the coating material; depositing the gas ions on the coating material; leveraging metal atoms out of the coating material by the deposited gas ions; and depositing the leveraged metal atoms on the component. (Paragraphs 0001, 0005, 0006, 0021, 0022, 0027, 0028, 0032, 0061, 0074-0078)

Regarding claim 31, Rickerby teach an apparatus for producing a protective layer comprising a process chamber adapted to receive a component to be coated with a coating material; a cathode disposed within the process chamber, wherein the cathode includes the coating material and wherein the coating material contains platinum and aluminum; a voltage source connected to the cathode; and a process gas, wherein the process gas is acceleratable through a voltage field applied to the coating material. (Paragraphs 0001, 0005, 0006, 0021, 0022, 0027, 0028, 0032, 0061, 0074-0078; Fig. 3)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rickerby (EP 0 992 606 A2) in view of Hecht (U.S. Pat. 4,346,137).

Rickerby is discussed above and all is as applies above. (See Rickerby discussed above)

The differences between Rickerby and the present claims is that the target additionally containing nickel as a coating material is not discussed (Claim 16), the target additionally containing cobalt is not discussed (Claim 17) and the target additionally containing yttrium is not discussed (Claim 18).

Regarding claims 16-18, Hecht teach the target can additionally containing nickel, cobalt and yttrium to form the layer. (Column 4 lines 19-28; Example; Column 5 lines 17-40)

The motivation for utilizing the features of Hecht is that it allows for producing high temperature fatigue resistant coatings. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Rickerby by utilizing the features of Hecht because it allows for producing high temperature fatigue resistant coatings.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rickerby (EP 0 992 606 A2) in view of Spitsberg (US PGPUB 2003/0203221 A1).

Rickerby is discussed above and all is as applies above. (See Rickersby discussed above)

The differences between Rickerby and the present claims is that heat treating the coated component is not discussed (Claim 22) and mechanically blasting the coating is not discussed (Claim 23).

Regarding claim 22, Spitsberg teach heat treating the coated component.
(Paragraph 0024)

Regarding claim 23, Spitsberg teach mechanically blasting the coating.
(Paragraphs 0023)

The motivation for utilizing the features of Spitsberg is that it allows for producing coatings with longer life expectancies. (Paragraph 0010)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the features of Spitsberg because it allows for producing coatings with longer life expectancies.

Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rickerby (EP 0 992 606 A2) in view of Pfaendtner et al. (U.S. Pat. 6,884,476).

Rickerby is discussed above and all is as applies above. (See Rickerby discussed above)

The difference between Rickerby and the present claims is that the mechanically blasting before physical vapor deposition is not discussed. (Claim 24)

Regarding claim 24, Pfaendtner et al. teach roughening before applying coatings.
(Column 6 lines 38-57)

The motivation for utilizing the features of Pfaendtner et al. is that it allows for bonding by a mechanical nature. (Column 6 lines 38-57)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Rickerby by utilizing the features of Pfaendtner because it allows for bonding by a mechanical nature.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rickerby (EP 0 992 606 A2) in view of Rigney et al. (U.S. Pat. 6,372,321).

Rickerby is discussed above and all is as applies above. (See Rickersby discussed above)

The differences between Rickerby and the present claims is that islands of Pt are not discussed. (Claim 25)

Regarding claim 25, Rigney et al. teach including islands of materials. (Column 3 lines 61-65)

The motivation for utilizing the features of Rigney et al. is that it allows for stabilizing the coating. (Column 3 lines 41-45)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Rickerby by utilizing the features of Rigney et al. because it allows for stabilizing the coating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M-Th with every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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April 5, 2010